Today's Climate Reality

Rob Burbea · Notable Dhamma Teachers — Rob Burbea · 27:43

So as I was preparing this, I thought, oh, I'm going to be the bearer of the difficult news. But of course, the Buddha encouraged us to look. The first noble truth—we need to connect with the stress, the suffering, understand what's happening before we can transform it, before we can heal, before we can move to that unlimited way of thinking. So we'll look for thirty minutes. Brace yourself at the reality of what's happening.

I'm drawing upon two reports, one from the American Association for the Advancement of Science, which came out recently. And this is what's happening now, observable now. The evidence is overwhelming, says the AAAS report. Levels of greenhouse gases in the atmosphere are rising and temperatures are going up. Today, our world is the warmest it's been in 100,000 years.

Half the Arctic sea ice is missing. That's an area that's nearly twice the size of Alaska. Glaciers and ice sheets continue to melt rapidly in Greenland and Antarctica and other places, contributing to sea level rise. It's also affecting water supplies for as many as a billion people around the world. The oceans are now 30% more acidic. The current acidification rate is likely to be the fastest in 300 million years.

For anyone who doesn't think climate change is happening now—that it's going to be happening sometime later—it's not the case. This is all happening now.

Because the sea level is rising, storm surges are higher, pushing saltwater into the aquifers that coastal communities depend on for fresh water. There's also an increase in the extent of coastal flooding. Over the last two decades, sea levels have risen almost twice as fast as the average during the previous century. Saltwater is infiltrating coastal wells in southern Florida and other places around the world.

The pattern of precipitation is changing worldwide. In the United States, there's increased flooding in the northeast, the Great Plains, and the Midwest. Drought has increased in the southwest, and we're painfully aware of it here as well. Drought impacted a large area of the United States in 2012.

Since 1950, heat waves worldwide have become longer and more frequent. One study indicates that the global area hit by extremely hot summertime temperatures has increased fifty-fold. Extreme storms like Hurricane Sandy and Super Typhoon Haiyan, which hit the Philippines and was one of the strongest storms recorded on the planet, are now more intense and more frequent. By the way, in this report from the American Association for the Advancement of Science, they used the word "extreme" nineteen times.

Time for a breath.

The area burned by wildfires and the length of the fire season have increased substantially in recent decades. Climate change has increased the threat of megafires—large fires that burn proportionally greater areas—and wildfires are now happening in areas that didn't have them before, at least not in recent history.

So why is this happening? This is the highest level of CO2 in the atmosphere in 800,000 years, and that's because of burning carbon. This is being caused by human activity. The AAAS report wanted to make that clear. They said 97% of climate scientists worldwide agree humans are causing this change. That's the good news, I think, because we can make changes to change that. And this is the same level of consensus—I thought it was brilliant that they brought this out—this is the same level of consensus in the scientific community as the medical community has that smoking contributes to lung cancer and heart disease.

No matter where they live, Americans are experiencing the effects of climate change. And of course, that's also true around the world. On every continent and in every ocean, plants and animals are already moving towards the poles, towards deeper depths and higher altitudes. Migration patterns are changing. Some seasonal behaviors are taking place two or three weeks earlier than they did just a few decades ago. There are many organisms that can't adapt that rapidly, so they're having problems. Climate change threatens to collapse some ecosystems, and it amplifies extinction pressures. We're already experiencing increased extinction rates.

There's another paper that just came out a couple weeks ago from the Intergovernmental Panel on Climate Change. They say heat waves, droughts, floods, cyclones, and wildfires alter the ecosystems.

They disrupt food production and water supply, damage infrastructure, increase morbidity and mortality, and impact mental health and human well-being. As an example, an estimated 70,000 people died prematurely in the 2003 heat wave in Europe. They estimate that 50,000 people died prematurely during the heat wave in Russia in 2010 due to the heat and the air quality caused by the many fires that were burning.

For perhaps the first time in an official report, the IPCC has linked violence to climate change, and it works in multiple directions. Wherever there's violence, populations are more susceptible and vulnerable to climate change impacts because their infrastructure and support systems are likely experiencing breakdowns. But climate change also has such profound effects on populations that violence becomes more likely to occur.

How many of you watched "Years of Living Dangerously" last Sunday? It was the first episode in a series airing on Showtime. Now, we don't have Showtime at the monastery, but the sisters and I were able to watch that first episode streaming over YouTube. One segment they highlighted examined the violence in Syria, showing how it really came on the heels of a prolonged, deep drought that prevented people from farming, from having food and water. When the government was unwilling to respond, this led to

violence. When we don't have sufficient food or water, and our government is either unwilling or unable to respond, violence quite naturally follows.

This graphic from the IPCC report gives us an opportunity to see how widespread the impacts of climate change truly are. The solid symbols indicate that climate change is making a major contribution to these problems. The outlined symbols show some contribution from climate change. The snowflakes represent glaciers and ice melts happening on every continent—including the Arctic at the top.

We see water issues in many places where climate change has major impact—in Africa, South America, here in North America, in Australia. Everywhere, on every continent. All these solid green fish symbols indicate high impact of climate change on marine ecosystems. We have high impact on terrestrial systems in many places around the world. We also see impacts on food production, represented by the little tractors. Perhaps not as strong in some places, but significant effects of climate change on the ability to grow food.

This is what's happening now. What are we to expect for the future?

In the near term—the next thirty years—we'll still be dealing with the effects of what has already occurred. Adaptation is essential, and there's extensive guidance in the IPCC report on how to adapt. We've already increased the average global temperature by 0.8 degrees Celsius, and it will probably rise another 0.8 to 1 degrees because we're not going to stop burning fossil fuels tomorrow. The consequences are dangerous now, and everyone agrees that we want to keep the increase below 2 degrees, because that would be a dramatically different world than we have currently.

As Thomas Lovejoy, former chief biodiversity advisor to the World Bank, says: "If we're seeing what we're seeing today at 0.8 degrees Celsius, two degrees is simply too much." NASA scientist James Hansen, probably the planet's most prominent climatologist, says the target discussed in international negotiations for two degrees of warming is actually "a prescription for long-term disaster."

So we want to do all we can to stay below two degrees.

What about the longer-term future? It depends on whether we adopt a low-emission scenario or a high-emission scenario. The IPCC report lays out what's going to happen—what's likely to happen, what the risks are—depending on which path we choose.

With high emissions, we have increased warming that leads to a greater likelihood of severe, pervasive, and irreversible impacts. All the things we just discussed will get worse if we go down that path.

But it's important to say: there's no such thing as too late. Everything we do to reduce emissions, everything we do to sequester carbon, everything we do to employ energy efficiency—it all helps. There's a lot we can do.

Right now, however, we're still on a high emissions path. So I'm duty-bound to explain what that's going to

look like, at least a little bit. If the planet warms between 4 and 6 degrees before we make the changes we need to make, it's going to be a very, very different world.

A 5 degree increase ended the last ice age. The American Association for the Advancement of Science reminds us that temperature changes due to CO2 emissions are essentially irreversible for several hundred years, since the CO2 is removed from the atmosphere only very slowly by natural processes. Rates of extinction are likely to place our era among a handful of severe biodiversity crises in Earth's geological record.

People's lives will be directly affected through impacts on livelihoods, reduction in crop yields, and destruction of homes, and indirectly through increased food prices and food insecurity. This is especially true for the poorer people of the world. We'll see breakdown in infrastructure, unplanned migrations, and probably more violence.

A scientist named Michael Werner of the Lawrence Berkeley National Laboratory was interviewed by KPFA earlier this month, and he talked more directly about the impact on our area. He says that the snowpack in the Sierras, which largely provides our water in California, and that the faster rate and earlier melting has dire consequences for our reservoirs. He says this will be happening before the middle of the century—not that much more time. In a recent paper, he reported that if we go up to 2.5 degrees warmer, the entire nation will be in severe drought. The West will be in extreme drought. The drought in Mexico, he said, will be off the charts. It will be unlivable. And this, he expects to happen sometime in the latter half of this century. He said this is straightforward based on a knowledge of physics and what happens with evaporation when things get hotter.

Now I'd like to shift our perspective and talk about the emissions that are causing this problem. I don't know if many of you have read Bill McKibben's article, "Global Warming's Terrifying New Math." What's interesting about it is that this math is very simple. It has three numbers involved, and it gives us an idea of exactly where to put our effort.

We've already talked about two degrees. 565 gigatons. Scientists started to wonder how much carbon can we burn before we cross that line of two degrees warmer. They calculated that it's 565 gigatons. They give that a pretty likely possibility, although it's not for sure—it might happen before we burn that much. But that's something to hold as an idea: that we only want to burn 565 more gigatons before we stop using fossil fuels.

So then they looked at how much we're burning now, what the rate of burn is, and how much we're increasing the rate of burn year by year. This was reported in 2012, and they said we have 15 more years. So right now we've got about 13 or 14 years left before we'll cross that line. We need to get to work on this.

Then what's interesting is a team of London financial analysts started looking at how much carbon we actually have. How much is in all the reserves that companies declare on their filings and reports? How

much does Venezuela and Kuwait have? They started adding things up and came to a very important number. How much do we already have at our disposal? It's five times the amount that we can safely burn if we call hovering up to two degrees safe. And the fossil fuel companies are still exploring for more every day.

A couple of years ago, the then CEO of ExxonMobil, Rex Tillerson, told Wall Street analysts that the company was planning to spend $37 billion a year through 2016. That's $100 million a day on further exploration. And that's just Exxon, searching for yet more oil and gas.

Now, what makes it so hard for the people involved in the fossil fuel industry to look at the reality of climate change and say, "Wait a minute, this is crazy. What are we doing?" Well, just to give you an idea, all those fossil fuels that are in their reserves contribute to their bottom line, and they're worth on the order of $27 trillion. So when we talk about keeping 80% of that in the ground, they're going to have to write off $20 trillion. I don't think they can wrap their heads around it.

So what's the sensible thing to do? Keep 80% of the fossil fuel in the ground. Remove the subsidies from the fossil fuel industry. What's really interesting is that our governments around the world give money to the fossil fuel companies to continue doing what they're doing. Governmental subsidies globally for fossil fuels increased from $300 billion in 2009 to $544 billion in 2012, according to the International Energy Agency. That came out in The Economist in January of this year. That's almost $1.5 billion a day going to the fossil fuel industry to keep destroying our planet.

If anyone tells you that we have an addiction to fossil fuels, tell them we don't have an addiction to fossil fuels. We'd be just as happy to get in our cars that are powered by the sun or the wind. In fact, a lot happier. It's the people with the $27 trillion that are addicted to fossil fuels. So just remember that. This is where that passion thing starts happening and people go, "Nuns, passionate?" Okay.

In addition to taking away the subsidies, we need to put a tax on carbon so that everybody on the planet wants renewable energy and we start demanding it from our governments and our infrastructure. We need to say, let's stop building more fossil fuel stuff. Stop exploring. Stop putting in new infrastructure. And we need to ban extreme extraction—fracking, deep sea drilling, tar sands, mountaintop removal, Arctic drilling. We're trying to get at every bit of fossil fuel that the Earth has.

James Hansen said that the tar sands in Alberta contain as much as 240 gigatons of carbon. That's almost half of the 565 that we can safely burn. This is dangerous stuff. We need to increase carbon sequestration and energy efficiency.

So why aren't we doing the sensible thing? Well, we're kind of caught in these feelings to some degree and some misinformation. And largely where the misinformation is coming from is the fossil fuel industry has enormous amounts of money to control governments and media. There are also large corporations profiting on the crisis—which is hard to imagine how anyone would want to make that karma—but Nestlé

is going into poor countries like Pakistan and buying up whatever clean water is available so they can put it in plastic bottles and sell it to us.

And that's happening while the World Health Organization is telling us that over a billion people in the developing world lack access to sanitary drinking water, and two million people die every year as a result, most of them children under five. So I'd recommend giving up on the bottled water.

So where do we go from here? Well, we know it needs to be done. People have been telling us for quite a while now. Lester Brown, who's an amazing economist and agronomist, has been telling us for a long time. There's a whole plan: Reduce carbon emissions by 80%. When he started talking about it, it looked more possible to do it by 2020, which he says is what's needed. But if we really turn around, if we really start doing the right things, we can go a long way toward that goal.

He also said we need to stabilize world population growth, which is something that happens every time you bring education to women. And when you give women an opportunity to have a say in their government? When you give women a chance to decide how many children they'll have and what their spacing should be, and you give them an education, population growth stabilizes.

One young woman said to me, "Don't feed them." As part of being involved in Buddhist Global Relief, our focus is on chronic hunger and malnutrition. "Don't feed them. They'll just have more children." I said, "No, I know. We have to appreciate that there are different points of view in this world." And the reality is we can create a better life for everybody.

Another of the four points Lester Brown brings up is eradicating poverty. When people have decent medical care and they believe their children are going to live, they don't have as many. I should say we don't have as many—I'm out of that business now.

And then he also says we need to restore our natural systems—our oceans, our rivers, our forests, our farmland.

So we need to understand what prevents us from acting. What are the emotional barriers, the psychological barriers, the physical and financial barriers in our own lives that keep us from really putting the effort out there, making that commitment to be engaged? And we need to determine to not stop until we break through those barriers.

And we really can do this together. Together is how it's going to happen. Thank you.

Transcriptions produced locally using Swiss low-carbon electricity. Corrections and rewriting by cloud-hosted AI.